UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,732	11/17/2003	Arup Acharya	YOR920030449US1 (8728-854	4665

46069 7590 03/03/2008

F. CHAU & ASSOCIATES, LLC
130 WOODBURY ROAD
WOODBURY, NY 11797

EXAMINER	
MEW, KEVIN D	

ART UNIT	PAPER NUMBER
2616	

MAIL DATE	DELIVERY MODE
03/03/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/714,732	ACHARYA ET AL.	
	Examiner	Art Unit	
	KEVIN MEW	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 December 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Detailed Action

Response to Amendment

1. Applicant's Remarks/Arguments filed on 12/26/2007 have been fully considered. Claims 1-11 are currently pending.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-2, 4, 6-7, 9, 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Dyke et al. (US Publication 2004/0153497 A1) in view of DiBiasio et al. (USP 7,225,271).

Regarding claim 1, Van Dyke discloses a method for handling Session Initiation Protocol ("SIP") messages for voice over Internet Packet call control, comprising:

receiving a stream of SIP messages (receiving a stream of SIP INVITE messages with different service types, paragraphs 0021-0025);

classifying the messages based on at least two message types (classifying SIP INVITE messages based the message service type, paragraphs 0021-0023);

placing said messages in separate queues associated to the message types (placing said SIP messages in separate application processors AP associated with the message service type, paragraph 0025); and

allocating SIP call control server processing resources to each queue (allocating SIP service to each application processor AP) according to a pre-defined policy (according to the service type included in the SIP INVITE message, paragraph 0025) associated with a corresponding message type (message service type, paragraphs 0021-0023),

Van Dyke does not explicitly show the step of allocating resources comprises allocating varying degrees of server processing resources to individual queues of SIP messages by using a token-bucket rate control for processing individual queues.

However, DiBiasio discloses identifying packets according to the type of traffic flow using token-bucket rate (col. 4, lines 60-67 - col. 5, lines 1-3, col. 13, lines 57-67 - col. 14, line 1) and selecting the queue servicing algorithm and applying the reserved resources (server processing resources) to packets matching the identified flow (col. 4, lines 60-67, col. 5, lines 1-3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the call distribution system and method of Van Dyke with the teaching of DiBiasio in identifying packets according to the type of traffic flow using token-bucket rate and selecting the queue servicing algorithm and applying the reserved resources to packets matching the identified flow such that the SIP system and method of Van Dyke will show the step of allocating resources comprises allocating varying degrees of server processing resources to individual queues of SIP messages by using a token-bucket rate control for processing individual queues.

The motivation to do so is to select the appropriate resources to service one or more traffic flows.

Regarding claim 2, Van Dyke discloses the method of claim 1, wherein the step of classifying the messages comprises classifying the messages as a REGISTER, INVITE (SIP INVITE message, paragraphs 0021-0025), or RE-INVITE message.

Regarding claim 4, Van Dyke and DiBiasio disclose all the aspects of claim 1 above. Van Dyke fails to explicitly show said rate of token generation for each queue being dictated by an importance attached to the message type.

However, DiBiasio discloses a token bucket rate is descriptive of a particular traffic flow type (col. 14, lines 1-12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the SIP resource allocation method of Van Dyke with the teaching of DiBiasio in having a token bucket rate to be descriptive of a particular traffic flow type such that said rate of token generation for each queue being dictated by an importance attached to the message type.

The motivation to do so is to use the token bucket rate as a flow parameter to determine the queue servicing algorithm to be assigned to a particular traffic flow

Regarding claim 6, Van Dyke discloses a signal-bearing medium tangibly embodying a program of machine-readable instructions executable by a digital processing apparatus to

perform a method for handling Session Initiation Protocol ("SIP") messages for voice over Internet Packet call control, said method comprising:

receiving a stream of SIP messages (receiving a stream of SIP INVITE messages with different service types, paragraphs 0021-0025);

classifying the messages based on at least two message types (classifying SIP INVITE messages based the message service type, paragraphs 0021-0023);

placing said messages in separate queues associated to the message types (placing said SIP messages in separate application processors AP associated with the message service type, paragraph 0025); and

allocating SIP call control server processing resources to each queue (allocating SIP service to each application processor AP) according to a pre-defined policy (according to the service type included in the SIP INVITE message, paragraph 0025).

Van Dyke does not explicitly show the step of allocating resources comprises allocating varying degrees of server processing resources to individual queues of SIP messages by using a token-bucket rate control for processing individual queues.

However, DiBiasio discloses identifying packets according to the type of traffic flow using token-bucket rate (col. 4, lines 60-67 - col. 5, lines 1-3, col. 13, lines 57-67 - col. 14, line 1) and selecting the queue servicing algorithm and applying the reserved resources (server processing resources) to packets matching the identified flow (col. 4, lines 60-67, col. 5, lines 1-3).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the call distribution system and method of Van Dyke with the teaching of DiBiasio in identifying packets according to the type of traffic flow using token-bucket rate and selecting the queue servicing algorithm and applying the reserved resources to packets matching the identified flow such that the SIP system and method of Van Dyke will show the step of allocating resources comprises allocating varying degrees of server processing resources to individual queues of SIP messages by using a token-bucket rate control for processing individual queues.

The motivation to do so is to select the appropriate resources to service one or more traffic flows.

Regarding claim 7, Van Dyke discloses the medium of claim 6, wherein the step of classifying the messages comprises classifying the messages as a REGISTER (SIP INVITE message, paragraphs 0021-0025), INVITE, or RE-INVITE message.

Regarding claim 9, Van Dyke and DiBiasio disclose all the aspects of claim 6 above. Van Dyke fails to explicitly show said rate of token generation for each queue being dictated by an importance attached to the message type.

However, DiBiasio discloses a token bucket rate is descriptive of a particular traffic flow type (col. 14, lines 1-12).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the SIP resource allocation method of Van Dyke with the teaching

of DiBiasio in having a token bucket rate to be descriptive of a particular traffic flow type such that said rate of token generation for each queue being dictated by an importance attached to the message type.

The motivation to do so is to use the token bucket rate as a flow parameter to determine the queue servicing algorithm to be assigned to a particular traffic flow.

Regarding claim 11, Van Dyke discloses a system (Fig. 2) for handling Session Initiation Protocol ("SIP") messages for voice over Internet Packet call control (paragraph 0016), comprising:

a classifier (SIP dispatcher 22, Fig. 2) for receiving a stream of SIP messages (receiving a stream of SIP INVITE messages with different service types, paragraphs 0021-0025) and classifying the messages based on at least two message types (classifying SIP INVITE messages based the message service type, paragraphs 0021-0023);

a plurality of queues associated to the message types (a plurality of application processors associated to the message service types, paragraph 0025);

a SIP control server (SIP dispatcher 22, Fig. 2) for directing calls corresponding to the messages (dispatching corresponding to the service types of the SIP INVITE messages) and waiting to be served in the queues (waiting to be served in the application processors APs, paragraph 0025); and

a scheduler (SIP dispatcher 22, Fig. 2) for allocating SIP call control server processing resources to each queue according to a pre-defined policy (for allocating application processing resources to each application processor according to the service type defined in the SIP INVITE

message, paragraph 0025).

3. Claim 3, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Dyke et al. in view of in view of DiBiasio et al. (USP 7,225,271), and in further view of Horvath et al. (US Publication 2005/0102421 A1).

Regarding claim 3, Van Dyke and DiBiasio disclose all the aspects of claim 2 above, except fail to explicitly show the method of claim 2, wherein the step of classifying the messages comprises classifying a message as an emergency call message by reading the destination address of a SIP INVITE message.

However, Horvath discloses in a VoIP network using the session initiation protocol SIP, an emergency call is recognized by reading the dialed destination address (paragraphs 0002, 0037).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the call distribution system and method of Van Dyke with the teaching of Horvath in recognizing an emergency call by reading the dialed destination address in a VoIP network using SIP such that the method of handling SIP messages in Van Dyke will also comprise the step of classifying the messages comprises classifying a message as an emergency call message by reading the destination address of a SIP INVITE message.

The motivation to do so is to allow an emergency call station to be contacted.

Regarding claim 8, Van Dyke and DiBiasio disclose all the aspects of claim 7 above, except fail to explicitly show the medium of claim 7, wherein the step of classifying the

messages comprises classifying a message as an emergency call message by reading the destination address of a SIP INVITE message.

However, Horvath discloses in a VoIP network using the session initiation protocol SIP, an emergency call is recognized by reading the dialed destination address (paragraphs 0002, 0037).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the call distribution system and method of Van Dyke with the teaching of Horvath in recognizing an emergency call by reading the dialed destination address in a VoIP network using SIP such that the method of handling SIP messages in Van Dyke will also comprise the step of classifying the messages comprises classifying a message as an emergency call message by reading the destination address of a SIP INVITE message.

The motivation to do so is to allow an emergency call station to be contacted.

4. Claims 5, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Van Dyke et al. in view of DiBiasio et al. (USP 7,225,271), and in further view of D'Souza et al. (US Publication 2004/0236966 A1).

In claim 5, Van Dyke and DiBiasio disclose all the aspects of claim 1 above, except fail to explicitly show the method of claim 1, wherein the step of allocating resources comprises controlling a rate at which messages from individual users are processed by a call control server, thereby preventing denial-of-service attacks on the call control server by individual servers in a packet-based VoIP infrastructure.

However, D'Souza discloses a system and method of mitigating denial of service attacks using SIP (paragraphs 0041, 0042, abstract) by dequeuing packets from a plurality of queues at different rates according to the level of trust associated to the source address of the incoming packets such that the higher the trust in the addresses the higher the rate at which the packets are dequeued from the given queue (paragraphs 0017, 0018).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the SIP resource allocation method of Van Dyke with the teaching of D'Souza in dequeuing packets from a plurality of queues at different rates according to the level of trust associated to the source address of the incoming packets such that the resource allocation method of Van Dyke will comprise controlling a rate at which messages from individual users are processed by a call control server, thereby preventing denial-of-service attacks on the call control server by individual servers in a packet-based VoIP infrastructure.

The motivation to do so is to mitigate the effects of a packet flooding denial-of service attack and the effects of data search resource exhaustion.

In claim 10, Van Dyke and DiBiasio disclose all the aspects of claim 6 above, except fail to explicitly show the medium of claim 6, wherein the step of allocating resources comprises controlling a rate at which messages from individual users are processed by a call control server, thereby preventing denial-of-service attacks on the call control server by individual servers in a packet-based VoIP infrastructure.

However, D'Souza discloses a system and method of mitigating denial of service attacks using SIP (paragraphs 0041, 0042, abstract) by dequeuing packets from a plurality of queues at

different rates according to the level of trust associated to the source address of the incoming packets such that the higher the trust in the addresses the higher the rate at which the packets are dequeued from the given queue (paragraphs 0017, 0018).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the SIP resource allocation method of Van Dyke with the teaching of D'Souza in dequeuing packets from a plurality of queues at different rates according to the level of trust associated to the source address of the incoming packets such that the resource allocation method of Van Dyke will comprise controlling a rate at which messages from individual users are processed by a call control server, thereby preventing denial-of-service attacks on the call control server by individual servers in a packet-based VoIP infrastructure.

The motivation to do so is to mitigate the effects of a packet flooding denial-of service attack and the effects of data search resource exhaustion.

Response to Arguments

5. Applicant's arguments filed on 12/26/2007 have been fully considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Mew whose telephone number is 571-272-3141. The examiner can normally be reached on 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on 571-272-3179. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KM

Kevin Mew
Work Group 2616

CHI PHAM
SUPERVISORY PATENT EXAMINER
2/27/08